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ABSTRACT

While the relationship between values and Holland personality types has been suggested, it has not been clearly established. A study was conducted to explore this relationship in a sample of 250 college freshmen and seniors. Subjects were classified by both Holland's Vocational Preference Inventory (VPI) and by college major. Subjects also completed Super's Work Values Inventory and a Personal Data Form. The value data for both VPI types and majors were analyzed by separate stepwise discriminant analysis procedures. Two significant canonical discriminant functions occurred for work values by type. The direction and ordination on function 1 indicated that the Artistic type valued Esthetics highly, while placing little importance on Security and Supervisory Relations. Function 2, which included Altruism and Achievement, showed the greatest separation between the Social type and the other types. Three significant canonical discriminant functions occurred for work values by major. Function 1 showed that Artistic majors highly valued Esthetics, Creativity, Independence, and Surroundings. Function 2 showed Social majors placing high importance on Altruism as compared to the other groups. Function 3 indicated an emphasis on Economic Return, Management, and Security for the Enterprising majors of business administration and political science. These findings are consistent with Holland's description of various types and they support the belief that values contribute to differences among the personality types. This research suggests the importance of integrating value assessment in selecting college majors and in career decision-making. (NB)

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Understanding Work Values and Vocational Interests

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Running head: UNDERSTANDING WORK VALUES

Abstract

The article explores the relationship between work values and Holland's personality types. A sample of 250 college freshmen and seniors was classified by both the Vocational Preference Inventory (VPI) and by college major. The subjects also completed Super's Work Values Inventory (WVI). The value data for both VPI types and major were analyzed by separate stepwise discriminant analysis procedures. Two significant canonical discriminant functions ($p < .01$) occurred for work values by type, while three significant canonical discriminant functions ($p < .01$) occurred by major. The results were generally consistent with Holland's description of various types and support the belief that values contribute to the differences among the six types. Beyond the theoretical implications, the study suggests the importance of integrating value assessment in selecting college majors and in career decision-making.

Understanding Work Values and Vocational Interests

Values are viewed as an integral component of personalities. Values are assumed to be derived through both a genetic and socialization process. While psychologists and educators recognize the significance of values as an important aspect of a personality, they are at a loss to clearly define the value components of personalities.

Vocational psychologists, such as Holland (1973), have indicated that personalities are a function of a unique set of characteristics, attitudes and values. Yet, of what that unique set of dimensions consists, seems to be left to the imagination of the reader. The theoretical linkage between personality and values seems entirely reasonable. The data to confirm such relationships unfortunately are lacking.

The purpose of this research was to investigate the value differences among a broad sample of college students, as typed by the Vocational Preference Inventory and by undergraduate major. Also, to identify the values which are part of various personalities.

The relationship between values and Holland personality types has been suggested but not clearly

established. In a study with a limited sample, the work values of male graduate students were significantly related to occupational choice as determined by academic major (Williams, 1972). Using discriminant function analysis, Williams found that students in the Social majors had the most consistent set of work values, while the other five groups were not as well discriminated.

Laudeman and Griffith (1978) indicated a generally consistent relationship between value dimensions and six groups of male seniors classified into Holland types. The study examined only males in one academic class and grouped only one major into each vocational type.

Hales and Hartman (1978) also found a significant relationship between personality and work values on five of fifteen possible pairwise comparisons. The values differed as expected. For example, the Social type placed greater value on altruism than did the Conventional type. It is difficult to generalize these results to all Holland types due to the selected group of only four majors and the small sample.

Method

Subjects

The researchers solicited subjects through classroom

presentations in introductory English classes and in upper level classes from various major fields. One hundred twelve freshmen and 138 seniors participated. The sample included 48 freshmen and 69 senior males. Approximately 1% of the sample exceeded the traditional college age range of 17-22.

Procedure and Instrumentation

Eighty-four percent of the volunteers returned useable self-administered instrument packets consisting of Holland's Vocational Preference Inventory (VPI), Super's Work Values Inventory (WVI), and a Personal Data Form. One hundred ninety-three of the subjects returned the material within a five day period. The remaining 57 returned the packet after follow-up telephone calls were made to them.

The VPI was used to categorize subjects into one of Holland's six personality types. The VPI consista of 160 occupational titles, to which the respondents indicate their like or dislike for each occupation. Holland (1973) summarized numerous validity studies which support the use of the VPI as a means of typing people according to their personalities.

The WVI (Super, 1970) yields scores on 15 work values which are defined as the qualities that workers desire

and seek in the activities in which they engage in or the objects they make or acquire. The values include Altruism, Esthetics, Creativity, Intellectual Stimulation, Achievement, Independence, Prestige, Management, Economic Return, Security, Surroundings, Supervisory Relationships, Associates, Way of Life and Variety. The instrument, with a five point Likert-type response scale and a test-retest reliability of .74 to .88 for all scales, has been favorably evaluated, and extensively used (Tiedeman, 1972).

Majors were typed according to Holland's (1966) procedure for classifying major fields. Table 1 shows the coding and number of subjects for each major in the present study. Only subjects who had declared a major or had stated an intent to declare a major were used in the

Insert Table 1 about here

analysis of college major.

Data Analysis

The value data for both VPI type and college major were analyzed by using separate SPSS-X stepwise discriminant function analysis procedures for both type

and major (SPSS-X Incorporated, 1983). The approach taken was a descriptive discriminant analysis with interpretation of the canonical variates.

Results

Discriminant Function by Type

Table 2 shows two significant canonical discriminant functions ($p < .01$) for work values by VPI type. The pooled within-groups correlations between the canonical discriminant functions and discriminating work values are also listed. The variables are ordered by the

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Insert Table 2 about here

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function with the largest correlations and the magnitude of that correlation. Function one weights heavily upon Esthetics, Security and Supervisory Relations, while function 2 weights heavily upon Altruism and Achievement.

Figure 1 plots the group centroids for the six VPI types according to the significant functions. The figure also shows the direction of the coefficient along the margins and the ordinations of the significantly correlated variables, based on the size of the correlation of the variables, with the canonical

discriminant function. The Artistic VPI type centroid has the highest coefficient for Esthetics and lowest coefficients for Security and Supervisory Relations. The Conventional type reflects the opposite pattern. The plot of group centroids for function 2 has the Social VPI type with the highest loadings on the Altruism and Achievement values.

Insert Figure 1 about here

Discriminant Function by Major

Table 3 shows three significant canonical discriminant functions for work values by college major. The pooled within group correlations between the canonical discriminant functions and discriminating work values are also listed. Function 1 weights heavily upon Esthetics, Creativity, Independence, and Surroundings. Function 2 weights heavily upon Altruism, while function 3 includes Economic Return, Management and Security.

Insert Table 3 about here

Figure 2 plots the group centroids for the six college majors according to functions one and two.

The figure also shows the direction of the coefficients along the margins and the ordinations of the significantly correlated variables, based on the size of the correlation of the variables, with the canonical discriminant function. The Artistic majors highly value Esthetics, Creativity, Independence and Surroundings, while Conventional majors place little importance on these values. The plot of group centroids for function two shows that Social majors highly value Altruism, while the Realistic majors place the least importance on this value.

Insert Figure 2 about here

Figure 3 plots the group centroids and directions according to functions one and three. The Enterprising majors highly value Economic Return, Management and Security as compared with other groups' majors.

Discussion

The results indicate that value differences do occur among Holland types, using both the VPI and college major as indicators of personality. Further,

these results provide support for one of Holland's tenants, that values contribute to the personality differences among the six types. The present study adds to the limited earlier studies by using a larger sample of subjects, both males and females, and from a broader range of academic majors.

Discriminant analysis of values by VPI types revealed two significant functions that are consistent with Holland's theory. The direction and ordination on function one (Figure 1), indicate the Artistic type values Esthetics highly, while placing little importance on Security and Supervisory Relations. This supports Holland's contention that Artistic types contribute to the beauty of the environment around them, and have a preference for ambiguous, free, unstructured situations, requiring little concern about relationships with supervisors or security. Artistic occupations and experiences tend not to have a high degree of security connected with them. In contrast, the Conventional type places importance on a well ordered environment and systematized activities usually leading to a conforming, subordinate role.

Function two (Figure 1) which includes the Altruism

and Achievement values, shows the greatest separation between the Social type and the other types. Holland perceives the Social type as helping others, understanding others and valuing social and ethical problems. This function also contains the Achievement value, which by WVI definition reflects the intrinsic sense of accomplishment in doing a job well. Although the intrinsic loading of the value can be seen as consistent with the Social type, it also intuitively appears to be linked with other personality types as well.

The discriminant analysis by college major revealed three significant functions. Function one (Figure 2), showed the Social major placing high importance on Altruism as compared to the other groups. The third function (Figure 3), indicated an emphasis on Economic Return, Management and Security. The Enterprising major, represented by the Business Administration and Political Science majors, values high economic return, an interest in planning and supervising the work of others, and security of a position in order to attain personal and organizational goals. The Enterprising group, consistent with Holland's description, scores higher on these values than the other college majors on the function.

Although supportive of Holland's theory by both VPI type and college major, additional research would expand the study's implications by increasing the sample size to ensure equal numbers of subjects for each personality type, and by exploring possible sex differences in values among Holland types. Also, the present study's sample included two discrete academic classes. Further study could examine value changes as they occur over a period of four years development.

Practical implications of the study suggest that career specialists need to examine work value differences in vocational counseling. Vocational psychologists and students need to recognize that not only workers in various fields but also students majoring in different fields of study will likely hold different values. Programs and activities need to reflect value differences between students and the need to assess the values of students interested in various majors and occupations related to these fields of study. These understandings can help students in their career self-awareness and exploration of the work world, as well as, encouraging counselors to examine values in career group programs and individual career decision-making.

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Table 1

College Majors and Numbers of Students Grouped by Holland Codes

Realistic	Investigative	Artistic
N=29	N=27	N=20
Wildlife/Fish.	Biology	Art
Geography	Chemistry	Music
	Mathematics	Speech/Thea.
	Physics	Philosophy
		Frgn. Lang.

Social	Enterprising	Conventional
N=70	N=20	N=34
Early Chldhd. Ed.	Business Admn.	Accounting
Elementary Ed.	Economics	
Physical Ed.	Political Science	
History		
Psychology		
Recreation		
Sociology		

Table 2

Summary of Stepwise Discriminant Function Analysis of Work Values Inventory by Vocational Preference Inventory Types

Canonical discriminant functions

Function	Wilkes' lambda	Chi-squares	DF	Significance
0	0.486	172.96	60	-
1	0.671	95.54	44	.000**
2	0.789	56.85	30	.002**
3	0.899	25.38	18	.114
4	0.964	8.77	8	.362

(table continues)

Pooled within-groups correlations between canonical discriminant functions and discriminating work values

	Function	
Work value	1	2
Esthetics	-.616*	-.166
Security	-.362*	.055
Supervisory relations	-.306*	.177
Altruism	.252	.653*
Achievement	.016	.128*
Independence	.095	-.180
Surroundings	.025	.155

(table continues)

	Function	
Work value	1	2
Management	.233	.116
Prestige	.022	.097
Economic return	-.158	-.096
Creativity	.250	-.101
Variety	.113	-.183
Intellectual stimulation	.104	-.243
Associates	-.134	-.032
Way of life	-.067	.187

$^{*}p < .05$. $^{**}p < .01$

Table 3

Summary of Stepwise Discriminant Function Analysis of Work Values Inventory by College Major

Canonical discriminant functions

Function	Wilkes' lambda	Chi-squares	DF	Significance
0	.312	208.83	65	-
1	.497	125.27	48	.0000**
2	.669	71.97	33	.0001**
3	.802	39.44	20	.0059**
4	.927	13.53	9	.1397

(table continues)

Pooled within-groups correlations between canonical discriminant functions and discriminating work values

	Function		
Work value	1	2	3
Esthetics	.689*	-.278	-.001
Creativity	.369*	-.126	-.136
Independence	.196*	-.011	.081
Surroundings	.119*	.036	-.054
Altruism	.318	.659*	-.093
Economic return	.042	-.184	.439*
Management	-.110	.103	.426*
Security	-.010	.036	.289*

(table continues)

	Function		
Work value	1	2	3
Prestige	-.020	.081	.132
Achievement	.088	-.046	-.042
Intellectual stimulation	.046	-.273	-.190
Variety	.170	-.192	-.079
Associates	-.136	-.080	.042
Way of life	.085	-.186	.214
Supervisory relations	-.130	-.010	-.002

$^{*}p < .05$. $^{**}p < .01$

Figure 1. Group centroid plots for six VPI types for canonical functions 1 and 2.

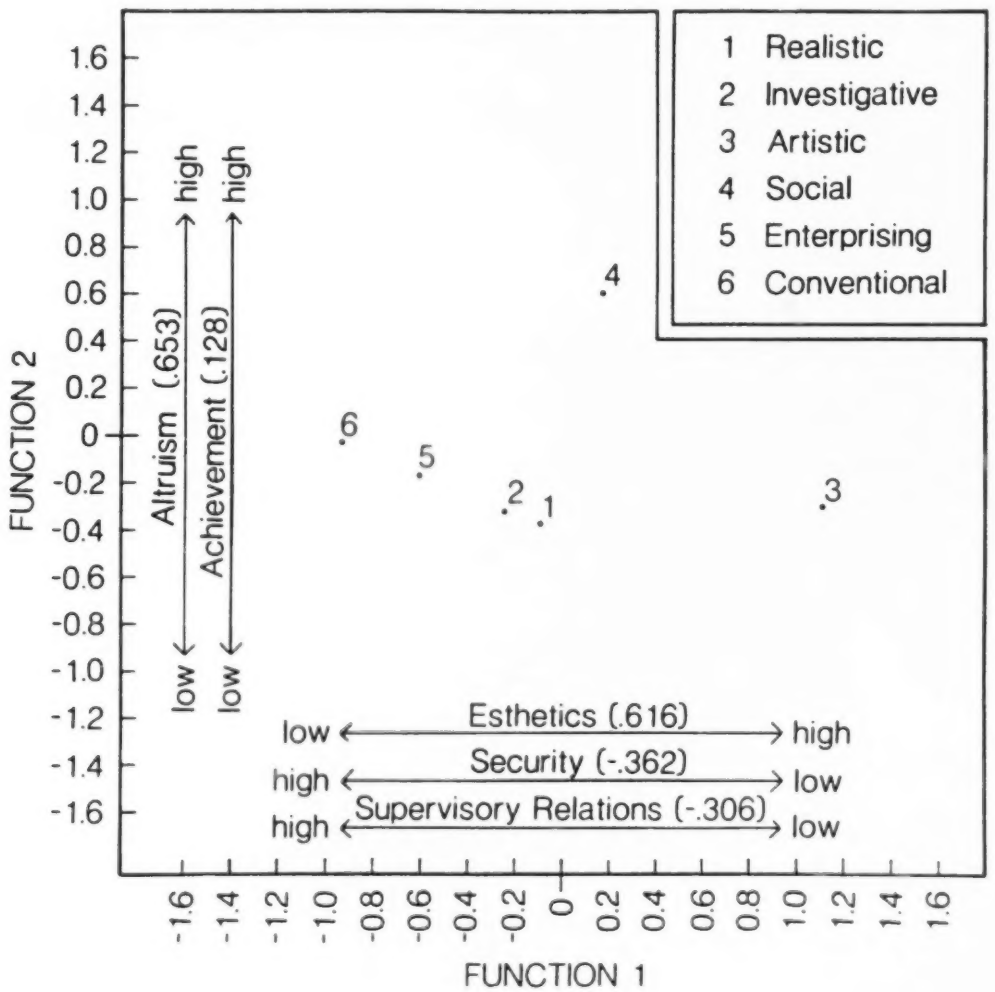

1 Realistic
2 Investigative
3 Artistic
4 Social
5 Enterprising
6 Conventional
FUNCTION 2
FUNCTION 1
Altruism (.653)
Achievement (.128)
high
low
Esthetics (.616)
Security (-.362)
Supervisory Relations (-.306)

Figure 2. Group centroid plots for six groups of college majors for canonical functions 1 and 2.

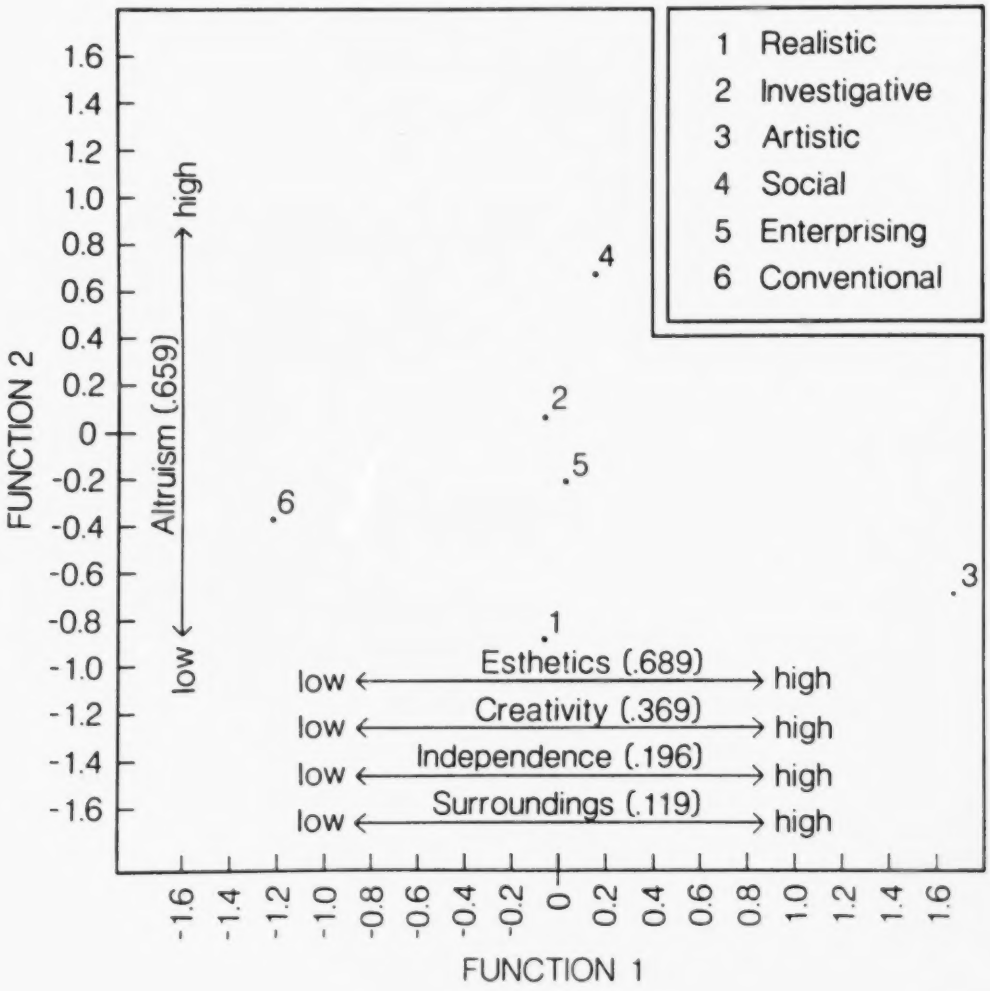
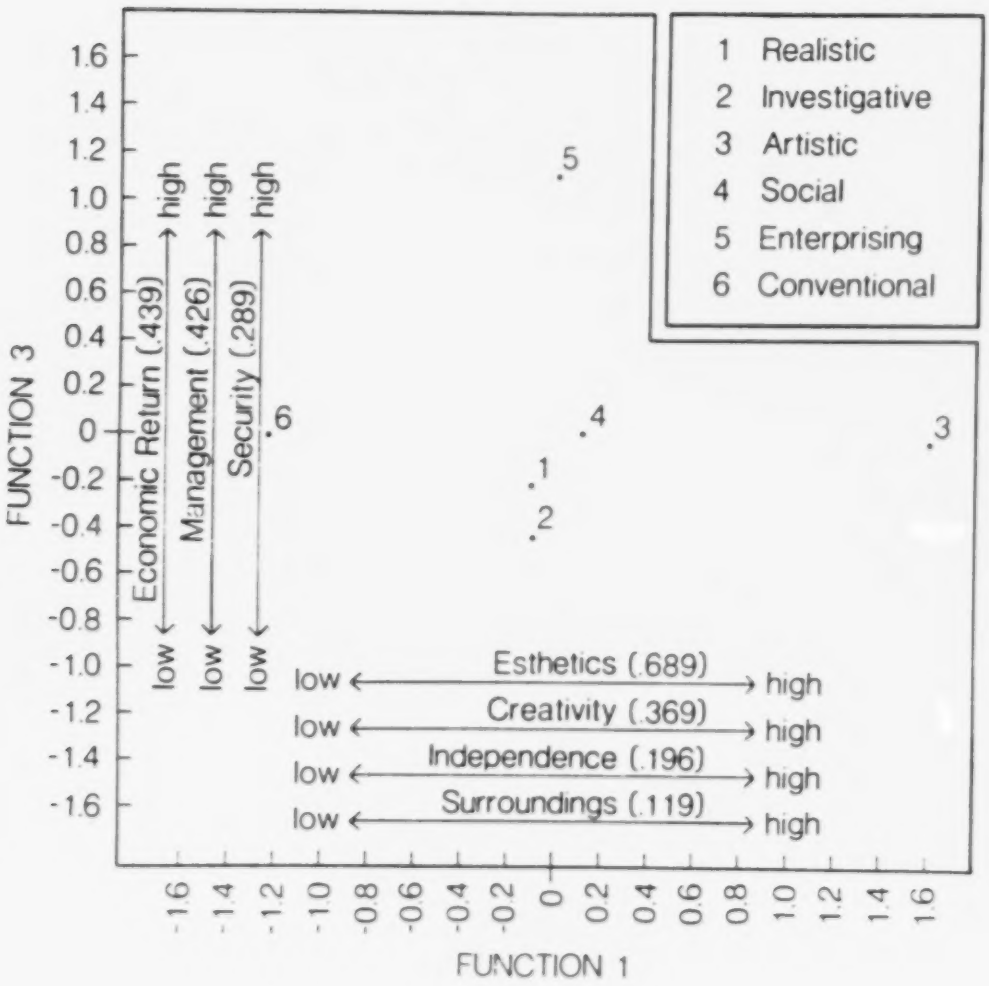

1 Realistic
2 Investigative
3 Artistic
4 Social
5 Enterprising
6 Conventional
FUNCTION 2
FUNCTION 1
Altruism (.659)
high
low
Esthetics (.689)
Creativity (.369)
Independence (.196)
Surroundings (.119)
low
high
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
-0.8
-1.0
-1.2
-1.4
-1.6

Figure 3. Group centroid plots for six groups of college majors for canonical functions 1 and 3.


1 Realistic
2 Investigative
3 Artistic
4 Social
5 Enterprising
6 Conventional
FUNCTION 3
FUNCTION 1
Economic Return (.439)
Management (.426)
Security (.289)
Esthetics (.689)
Creativity (.369)
Independence (.196)
Surroundings (.119)
low
high